

Customer No.: 31561
Docket No.: 12739-US-PA
Application No.: 10/710,698

REMARKS

I. Present Status of the Application

The Office Action has objected to the drawings because Figure 1 is not designated by a legend, such as Prior Art.

The Office Action has objected to the specification for certain informality in the disclosure and the title of the invention being not descriptive.

The Office Action has objected to claim 9 because of certain informality including misspellings.

The Office Action has rejected claims 8, 11 and 12 under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as being obvious over Fu et al. (US 6,251,242, referred to hereinafter as "Fu").

The Office Action has rejected claims 9 and 10 under 35 U.S.C. 103(a) as being unpatentable over Fu in view of Hinterschuster et al. (US 5,538,609, referred to hereinafter as "Hinterschuster").

The Office Action has rejected claims 13-15 under 35 U.S.C. 103(a) as being unpatentable over Fu in view of Beardmore et al. (US 3,869,386, referred to hereinafter as "Beardmore").

In response thereto, Applicant has amended the title and the disclosure of the specification, claim 9, and the drawing of FIG. 1, in accordance with the requirements for appropriate correction proposed by the Examiner to overcome the objections. In addition, Applicant has also amended claims 8 and 13 to describe the claimed invention more

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explicitly. It is believed that no new matter is added by way of the amendments made to the present application. After entry of the proposed amendments, it is submitted that the presently pending claims 8-15 are placed in proper condition for allowance, and reconsideration of all pending claims is respectfully requested.

II. Objections to Drawings, Specification, and Claims

The drawings have been objected to because Figure 1 is not designated by a legend, such as Prior Art.

In response thereto, Applicant has amended the drawing sheet including FIG. 1 to overcome this objection. As the amendment made to the drawing sheet, a legend "PRIOR ART" is designated on FIG. 1 for correction.

The disclosure of the specification has been objected to for certain informality and the title of the invention being not descriptive.

In response thereto, Applicant has amended the disclosure of the specification in paragraph [0047] to improve the informality. The term "FIG. 36A" recited in line 2, paragraph [0047] of the originally-filed specification has been replaced by the term "FIG. 6A" for correction as the Examiner suggested.

Further, Applicant has amended the title of the invention to clearly indicate the present invention to which the claims are directed. The title filed on November 14, 2007 is replaced with a new title "PHYSICAL VAPOR DEPOSITION PROCESS AND APPARATUS THEREFOR".

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Claim 9 has been objected to for certain informality.

In response thereto, Applicant has amended claim 9 to improve the informality, and further overcome the objection. As the amendment made to claim 9, the term "plate" is replaced with "platen" for consistency. Also, the term "plate" recited in paragraphs [0038], [0044], [0047], [0051] and [0055] within the specification have been amended correspondingly to comply with the amendment made to claim 9.

Therefore, Applicant asserts that these objections are no longer proper, and withdrawal of these objections is respectfully requested.

III. Discussion of Claim Rejections under 35 U.S.C. 102 and 35 U.S.C. 103

Claims 8, 11 and 12 have been rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as being obvious over Fu.

Claims 9 and 10 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Fu in view of Hinterschuster.

Claims 13-15 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Fu in view of Beardmore.

In reply to the rejections, Applicant has amended independent claims 8 and 13 to more clearly define the apparatus and the process according to the present invention. The supporting ground for the amendments made to claims 8 and 13 can be found at least in FIGs. 9A-9D and their related description in the disclosure of the specification.

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As such, Applicant submits that the present invention, as set forth in claims 8-15, is neither taught, suggested nor disclosed by Fu, Hinterschuster, Beardmore, taken alone or in combination, and hereby traverses these rejections as described in detail hereinafter.

The present invention teaches in amended claims 8 and 13 respectively, among other things, a physical vapor deposition apparatus and process including a rotating magnetron device with at least two symmetric magnet sets, wherein two symmetrical magnets in two correspondingly symmetrical magnet sets have opposite orientations in magnetic pole and two adjacent magnets in each of said magnet sets have opposite orientations in magnetic pole. In other words, each magnet within a magnet set has a corresponding magnet within the other magnet set, which is axially-symmetric or planarly-symmetric to the foregoing magnet set, and the two symmetrical magnets belonged to two symmetrical magnet sets respectively have opposite orientations in magnetic pole. That is, one magnet with the N pole directed upward and the other magnet with the N pole directed downward are disposed symmetrically on either side of a dividing plane or axis, for example.

Fu, on the other hand, discloses that "the magnetron 14 illustrated in FIG. 1 includes one or more central magnets 30 having a first vertical magnetic polarization and one or more outer magnets 32 of a second vertical magnetic polarization opposite the first polarization and arranged in an annular pattern the inner magnets 30 are disposed within a cylindrical central well 36 formed between the opposed portions of the inner target sidewall 24 while the outer magnets 32 are disposed generally radially outside of the outer target side wall 22" (col. 5, lines 33-43). As shown in FIG. 1 of Fu, the Examiner interprets one set of magnets to be the two left of the central axis and the second

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set of magnets to be the two right of the central axis. While the two symmetrical magnets near the central axis 16 are the inner central magnets 30 having a first vertical magnetic polarization and the two symmetrical magnets away from the central axis 16 are annular outer magnets 32 of a second vertical magnetic polarization, the orientation of the two symmetrical magnets cannot be shown to have opposite magnetic poles to each other between the two sets alleged by the Examiner. That is to say, Fu fails to teach, suggest or disclose the limitation "two symmetrical magnets in two correspondingly symmetrical magnet sets have opposite orientations in magnetic pole", as recited in amended independent claims 8 and 13.

In at least the aforementioned regards, Applicant submits that the Examiner's reading of Fu is no longer proper. With respect to amended independent claim 8, Applicant submits that Fu is legally insufficient in the anticipation or rendering the present invention obvious proposed by the Examiner because Fu substantially fails to teach, suggest or disclose each and every feature required in independent claim 8 of the present application. Moreover, since Fu reference apparently does not disclose this technical feature set forth in claim 13, the combination of Fu in view of Beardmore cannot deem to establish a *prima facie* obviousness type rejection over the current application regarding amended independent claim 13. Thus, independent claims 8 and 13 are believed to distinctly and patentably define over Fu, and the rejections of independent claims 8 and 13 should be rendered moot.

Applicant further respectfully points out that if independent claims 8 and 13 are patentable over the prior art of record, claims 9-12 and 14-15, based on their dependence

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upon claims 8 and 13 respectively, are allowable as a matter of law, because these dependent claims contain all features of their respective independent claims.

Hence, favorable consideration and allowance of the present invention and all pending claims are hereby courteously solicited.


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For at least the foregoing reasons, it is believed that all pending claims are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

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Respectfully submitted,


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